examples of about one millim. in diameter are the most abundant. They are generally so densely filled with mud-particles, Diatomaceæ, shells of *Difflugia* and *Arcella*, &c., that by transmitted light they can scarcely be distinguished from the actual mud without experience and careful examination; they may consequently be compared to a living mud. By direct light, on the other hand, they appear as grayish-white, yellowish, or brownish bodies. Their movements consist in an amœboid and often lively creeping by means of processes which are usually broad and lobate; during this process, the transparent body-substance often protrudes at the margins in elevations and undulations. This fundamental substance of the body consists of a *hyaline protoplasm* of irregularly *frothy or vesicular* consistency, containing, besides the above-mentioned ingested particles, a great number of very peculiar elementary particles. Among these there may be distinguished *round or roundish oval nucleiform bodies*, and *fine bacilliform structures*. Of the former by far the greater number consist of *shining pale bodies without any special structural characters*, but *of great firmness*, and presenting *considerable resistance to reagents* (acetic acid and caustic potash). These bodies may possibly be correlated with the coccoliths, &c., of *Bathybius*. Besides these, however, there are less numerous roundish nuclei of softer consistency, and with more or less finely granular contents, which, from their whole nature, must undoubtedly be regarded as equivalent to the ordinary cell-nuclei.

Hence in spite of its great simplicity in other respects, *Pelobius* represents a *pluricellular organism*, and is not to be referred to the so-called Monera, like *Bathybius Haeckelii*, according to the investigations of Huxley and Haeckel. Nevertheless, in connection with its possible relationship to *Bathybius*, it must be noticed that the cell-nuclei of *Pelobius* may occur in very variable quantity, often in so small a number as almost to disappear altogether; and further, that they can be detected only in the perfectly fresh state. This latter statement applies also to the frothy vesicular arrangement of the body-substance, which disappears immediately after death or the application of reagents.

The second kind of the chief elementary parts of *Pelobius* consists of *fine*, *clear*, *shining bacilli*, which are scattered through the whole body, and likewise present great resistance to the action of acetic acid and caustic potash. These were mentioned by Dr. Greeff in a former publication, when he expressed the opinion that they originate in certain nuclei, which, however, he has since seen reason to doubt.

The author has devoted much time and trouble to the investigation of the developmental history of this interesting organism, an exact knowledge of which would be in many respects of the greatest importance. He proposes to publish what has hitherto been observed upon this point (which in some respects recalls the Myxomycetes) in a detailed memoir upon *Pelobius* in Max Schultze's "Archiv für mikrosk. Anatomie," in which some other Rhizopods found under the same conditions as *Pelobius*, and resembling it, will also be described.

NOTES

THE intelligence of the death of Sir John Herschel will fall on the whole scientific world with a sense of personal bereavement. Though he had attained above the ordinary span of life, his mind was still in the maturity of its powers; and few men have been so familiarly known by their writings and their discoveries beyond the narrow pale of the world of science. Next week we hope to give a biography of the great astronomer whose loss we deplore. It is fitting that Herschel II. should be buried in Westminster Abbey, and it is creditable to the authorities that his ashes will be permitted to rest there.

THE annual visitation of the Royal Observatory by the Board of Visitors is fixed to take place on the 3rd of June.

LETTERS have been received in this country from Dr. Adolf Bernhard Meyer, who left Europe last year for a journey through a part of the Malayan Archipelago and New Guinea. He reached Manado in Celebes in November last, just as the wet season commenced. He had chosen this place as his starting point, because he had been informed by a celebrated traveller in the East that the fine season commenced at Manado in the month of October. Nevertheless, he succeeded in making large collections of birds, reptiles, and fishes, which are on their way home.

THE Anniversary Meeting of the Geographical Society takes place on Monday next at 1 P.M., and that of the Linnean on Wednesday at 3. The Victoria Institute holds its annual meeting at eight o'clock on Monday, 22nd May, at the Society of Arts Rooms, John Street, Adelphi, when the Rev. W. J. Irons, D.D., will deliver the address.

A MANUAL OF ORGANIC CHEMISTRY, by Dr. Henry E. Armstrong, F.C.S., Professor of Chemistry in the London Institution, is advertised by Messrs. Longmans and Co., as being in preparation for their admirable series of Text-books of Science.

AT a session of Council on Saturday last, the Right Hon. Lord Belper, vice-president in the chair, Mr. E. J. Poynter, A.R.A., was appointed Slade Professor of Fine Art in the College. The buildings, forming part of the north wing, which have been designed for the Fine Art School, are nearly completed, and it is intended to open the classes for drawing, painting, and sculpture at the beginning of the College session in October next. The late Mr. Felix Slade has established at the college six scholarships for proficiency in those branches of Art, each of the value of 50*l.* per annum tenable for three years, and which may be held by ladies.

AN exhibition of Palæolithic Stone Implements will be on view at the rooms of the Society of Antiquaries, Somerset House, from May 19th to 25th inclusive, from 11 A.M. to 6 P.M.

AT the General Examination of Women at the University of London, just concluded, four passed in honours and nine in the first division. It is understood there were about double that number of candidates.

WE learn from the *Academy* that the Zoological Collection of the British Museum has been lately enriched by the purchase of a magnificent series of Sponges from South Africa, the majority of which are likely to prove new to science. It is to be hoped that the group of the *Spongiadæ*, now attracting so much attention in scientific circles, will receive a more liberal allotment of space in the new museum to be erected at Kensington. The utter unfitness of the present building to meet the daily increasing requirements of the national collection is evidenced from the fact that numerous groups of the *Invertebrata* are literally "crowded out," and entirely unrepresented in the series devoted to public exhibition, for want of the necessary space. This, and the inadequacy of the present slender staff of the Natural History department to effect the thorough and systematic arrangement of the extensive and valuable collection, and to elevate it to that high scientific status enjoyed in the leading continental museums, demand the most earnest and speedy attention.

MR. BOUCARD, the well known dealer in specimens of Natural History, and traveller, formerly living in Paris, but now resident in London, proposes the publication of a work on the Coleoptera of Mexico and Central America, including the adjacent portions of the United States, especially the Pacific region. He earnestly desires contributions of specimens, whether named or not, to be used in his investigations, and will return such as he is not permitted to keep, suitably identified, and will render an equivalent in other specimens, if desired, for such as are sent to him to be retained. Any specimens intended for him may be sent to his establishment, 55, Great Russell Street, Bloomsbury.

MR. C. H. BELFRAGE, of Waco, M'Lennan Co., Texas, announces that, at the request of several gentlemen in the United States and Europe, he intends making an extensive eight or nine months' entomological collecting tour in Western Texas and Southern New Mexico, if sufficient means can be raised, and invites every entomologist who wishes to enrich his collection to assist in the undertaking. Mr. Belfrage is recommended by Dr. A. S. Packard, jun., the editor of the *American Naturalist*, as a faithful and excellent collector, and the opportunity seems to be an unusual one of obtaining specimens of rare or little-known insects. Mr. Belfrage's address is at the above township, care of Messrs. Forsgard and Co.

THE Clifton College Scientific Society has just issued the first part of its "Transactions," which affords a happy illustration of its motto, *Viresque acquirit eundo.* Not yet two years old, and commencing with eighteen members, it has steadily increased in popularity and usefulness under the able presidency, first of Dr. Debus, and then of Mr. Barrington-Ward, till at one of its most recent meetings, nearly ten times that number of visitors and members were present. In this volume a number of interesting papers by the members, on various branches of natural and physical science, are printed; but we are most interested in the sketch of the constitution of the society. The School Museum has wisely been constituted especially a British one, and in order to facilitate the study of the natural history of the neighbourhood, and promote the other objects kept in view, the Society has been divided into sections of botany, geology, entomology, chemistry, physics, and archæology, the novel principle being introduced of limiting the number of members of each section to ten, in order to ensure a thoroughly working body. The Society has entered on its work in a spirit which entitles us to hope that it will be among the leaders in the spread of a real love of science among the generation now rising up.

MR. H. ROGERS read an important paper before the Edinburgh Botanical Society on March 9, a report "On the Effects of cutting down Forests on the Climate and Health of the Mauritius." The epidemic which broke out in 1865 in the colony, previously so remarkable for its salubrity, he traced to this cause, and stated that between 1854 and 1862 vast tracts of forests had disappeared, causing a diminished amount of rainfall, an increased amount of dryness, and a proportionate elevation of temperature. The difference in seasons is now much less marked, rains are scarce, droughts frequent and excessive, vast tracts of land, formerly productive, are now barren and desolate, and districts before noted for salubrity are now notoriously unhealthy. Although the amount of rainfall is much reduced, the violence of the rain is increased when it does fall, and heavy floods are the result. It was immediately after one of these inundations that the fever broke out in February 1865, which proved so terribly fatal in the colony.

FROM Ireland we have received the First Annual Report of the Natural History and Philosophical Society of Derry. Among papers of local history we find some on the antiquities, geology, entomology, and fucology of the neighbourhood of Derry, with drawings and photo-lithographs of cinerary urns found at Grange, Malin, and Buncrana, to illustrate a paper on that subject by the president, Mr. W. Harte. The society has made a good start, and we wish it all success.

THE Manchester Scientific Students' Association has issued its Tenth Annual Report for 1870. Although none of the papers read during the past year are printed in the report, the association, judging from the list of proceedings at the ordinary meetings, the Microscopical Club, and the Mechanical and Engineering Section, appears to have been doing some good and useful work. The number of members has slightly decreased during the year, but the committee hope soon to raise it again, and thus obtain funds for some desirable additions to the library.

IT is stated in *Land and Water* that the laudable effort of the Acclimatisation Society of Otago to introduce birds and animals into New Zealand has lately met with great success. The ships *City of Dunedin* and *Warrior Queen* have arrived in New Zealand with a living cargo of birds and animals which have thriven wonderfully well on board ship during their long voyage. Thus there are now in New Zealand five red-deer—we regret the stag died on the voyage—goldfinches, skylarks, blackbirds, sparrows, chaffinches, &c. The robins, numbering over a hundred, unfortunately died on the voyage. It is certain that the climate of New Zealand is admirably suited for the well-being and establishment of a British fauna. The colonists wisely recognised the importance of the study of "Practical Natural History," particularly as regards keeping insect life in check by means of small birds, the little feathered servants whose services are not sufficiently appreciated by agriculturists at home. Within the next fortnight thousands of young rooks will fall victims to the pea-rifle in England. How much better would it be if these unfortunate birds could have been sent across the ocean to our friends and relations in New Zealand! We understand that the cockchafer has been imported with English grasses, but the enemy to the cockchafer, the rook, has been left at home. We hope that next year the Otago Society will repeat their experiments with insect-eating birds, the unpaid "police of nature," which would keep in check the insect "pests of the farm," which have now pretty nearly their own way, to the injury of the farmer and horticulturists at the antipodes. The greatest credit is due to Mr. John A. Ewen for the pains he has taken in shipping the birds, and to Mr. Bills for the care and skill he has shown by his judicious management of the birds during the long voyage.

ON the 4th and 6th of March two shocks of earthquake were felt at Bogota, in Columbia, and these shocks were felt at the same dates at Cartago.

ON the 19th February the great earthquake in the Hawaian Islands took place. This was succeeded on the 2nd March by an earthquake at Eureka, in Humboldt County, California.

THE whole west coast of America, throughout its great mountain range, has now been seriously disturbed for some months. As far north as Washington Territory, Mount Rainer is reported as in commotion.

ON the 22nd February an earthquake was reported at Pano, in Peru, and a stronger one at two A.M. on the 23rd. These were slightly felt at Lima.

FROM recent advices we have to report the continuation of serious disturbances on land and by sea of the meteorological and physical conditions of the west coast of the Pacific. The phenomena appear to have been preceded long since, and are now accompanied, by volcanic disturbance, and some of them have passed from north to south. One remarkable feature is that of the inundations, particularly in the districts actually rainless. On the Isthmus of Central America rain is common, but this year the amount has been great, and the inundation greater. During the season immense quantities of vapour have been converted into rain along the western slopes of the Cordillera and the Andes. In northern Peru the effects have been particularly felt, and the more severely as the cities were unprovided to encounter rains or floods. Lambayegue, an interior town of 7,000 people, is destroyed, and the population have abandoned that of Supé. In some places bogs have been produced in which the cattle perish. Mud is washed far out to sea, and among the animals carried off was an alligator driven into Payta Bay. The circumstances are worthy of notice, as they illustrate some of the incidents of geological disturbance. At sea rain is met with a hundred miles out, to the surprise of captains, who report the winds and currents as changed.

IT is stated in some of the papers that the system of storm-signal observations, now in progress under the direction of the Signal Corps of the army, was devised by Great Britain before it was made use of by the United States Government. This is perhaps correct, so far as it goes; but it is to Prof. Henry, Secretary of the Smithsonian Institution, that we owe the original idea of procuring despatches regularly in relation to the weather, and tabulating them, as also of placing them on a map so as to show, day by day, the general character of the weather through out the United States. For several years prior to the beginning of the war this system was carried on regularly, and was of great interest to visitors to the Institution. The occupation of the telegraph lines for military purposes, and the fire in the Smithsonian building, broke up the arrangement; and it was about to be resumed when the Government undertook the work, thereby relieving the Institution from the necessity of its further prosecution.

THE California vulture (*Cathartes Californianus*) is the largest species possessed by the fauna of Western America, where it ranges over an immense space of country in search of food. When any large game is brought down by the hunter these birds may be seen slowly sweeping towards it, intent upon their share of the prey. Nor in the absence of the hunter will his game be exempt from their ravenous appetite, though it be carefully hidden and covered with shrubs and heavy branches, as they will drag it forth from its concealment and speedily devour it. Any article of clothing, however, thrown over a carcase will shield it from the vulture. In some localities the nests are known to the Indians, who year by year take the young, and, having duly prepared them by long feeding, kill them at one of their great festivals. The California vulture joins to his rapacity an immense muscular power, as an instance of which it is stated that four of them jointly have been known to drag for over two hundred yards the body of a young grizzly bear weighing more than a hundred pounds.

DR. NEWBERRY, in his interesting report of the botany of the explorations for a railroad route from the Sacramento Valley to the Columbia River, speaks thus of the district lying east of the Sierra Nevada and the Cascade Mountains:—"The general aspect of the botany of this region is made up of three distinct elements. Of these the first is presented by the grassy plains which border the streams flowing down from the mountains. On these surfaces grows a considerable variety of animal vegetation, not unlike that of the Sacramento Valley in its general character. The second of these botanical phases is that of the 'sage' plains, surfaces upon which little or nothing else than clumps of artemisia will grow. The third is formed by forests of yellow pine (*Pinus ponderosa*), which apparently finds on these arid surfaces its most congenial habitat. It sometimes happened to us that, during a whole day's ride, we were passing through a continuous forest of these yellow pine trees in which scarcely a dozen distinct species of plants could be found."

THE night heron of the United States (*Nyctiardea Gardeni*) is much dreaded by the Indians, who have many traditions and superstitions connected with it, and believe that it has the power of transforming human beings into inferior animals. Of the blue heron (*Ardea Herodias*), they say that he was formerly an Indian, and that perpetual quarrels raged between his wife and himself. On this account they were both transformed by a superior power, the man becoming a heron, the woman a dabchick (*Podiceps cornutus*), at the same time the brother of the woman was changed into the western grebe (*Podiceps occidentalis*), a native of the Pacific coast.

REPORT ON THE DESERT OF TIH

(*Continued from page* 35)

THE following are the various observations I have made and tales I have collected about some of the birds and mammals found in the desert of Tíh and adjoining regions. For convenience of reference I have arranged them alphabetically. In the cases of well-known animals, or of such as have been before scientifically described, I confine myself chiefly to the Arab stories or legends attaching to them:—

Bears (*Ursus syriacus*), Arabic *Dabb*, are still found on Mount Hermon and the Anti-Lebanon, and must formerly have existed in Palestine, but the destruction of the woods has now driven them northwards. They do much damage to the vineyards in the neighbourhood of Hermon, but seldom interfere with the herds of goats. The Arabs share in the widely-spread belief that bears sustain themselves during their hybernation by sucking their paws. They also say that when the female drops her cub it is quite shapeless, and that she carries it about in her mouth for fear lest it should be devoured by the ants, and then licks it into proper shape. Bear's grease is said to be useful in cases of leprosy.

Boar, wild, Ar. *Halhouf*, or usually in Palestine, *Khanzir*, which simply means pig. These animals are very abundant wherever there is cover near water, as on the banks of the Jordan and in the Ghor es Sáfí at the S. of the Dead Sea. I was much surprised to find traces of recent rooting by them in the W. Rákhamah, which lies between El Milh and 'Abdeh. This place is far from any water except what may have collected in hollow rocks, and can boast of no cover. The 'Azázimeh eat the wild boar, but the Ghawárineh, who will eat a hyæna, though it is known to frequent the grave-yards, will not touch them.

In this, as in the case of the other animals, I can insert but a few amongst the many medicinal uses to which they are put by the Arabs, as these are in general unsuited to the taste of European readers.

Bustard (*Otis hubara*) Ar. *Hubara*. I noticed a few of these birds in the Tíh; the Arabs say that the lesser bustard (*Otis tetrax*) which is also occasionally found there, is the young of the larger, but does not attain its full growth for two years. They also say that these birds, when attacked by a falcon, will cover it with their fæces, and so drive it off.

Camel, Ar. masc. *jemel*, fem. *nágah*. A stallion camel is called *fahl*. Collectively, *ibil* vulgo *bil* or *báir*, pl. *aarán*. *Hejjin* is usually applied to a dromedary, but is properly used of a man, horse, or camel having an Arab sire and foreign dam, which, in the case of the animals, is considered the best possible cross. Hence, a dromedary (or well-bred camel used for riding) is so called.

Camels are most peevish animals, docile only from stupidity; ill-tempered, they never forget an injury. I have but once seen a camel show the slightest sign of affection for its owner, although they are always well treated. All their feelings of like and dislike, pleasure and annoyance, are expressed by a hideous sound between a bellow and a roar, to which they give utterance whether they are being loaded or unloaded, whether they are being fed or urged over a difficult pass; in fact, they disapprove of whatever is done. Without them, however, it would be impossible to cross the deserts, for no other animal could endure the fatigue and want of water; I have myself seen a camel refuse water after having been without any for three days. For their food they always choose the most uninviting thorny shrubs; the seya](acacia) which has thorns two or three inches long, is an especial favourite with them. Many of the Arabs subsist almost entirely upon the milk and cheese afforded by their herds of camels.

The Pelican is called *jemel el ma*, or water camel; and the Chameleon, *jemel el yehúd*, the Jew's camel.

Cat, or *Kutt*, also *Sinnaur* and *Hirr*. According to some lexicographers, the first name is not a pure Arabic word. Cats are held in great estimation in the east, and large prices are sometimes paid by native ladies for fine Persian specimens. In Cairo a sum of money was left in trust to feed poor cats, who daily receive their rations at the Mahkemah (law courts).

Though the Arabs in Sinai and the Tíh spoke of a wild cat, *gatt berri*, I found that this was always the lynx (*Felis caracal*), which is called in some parts of Arabia *'inak el ardh*, or earth-kid; in Sinai, it is also spoken of as *ânazeh* (from *ânz*, a she-goat). In Morocco, it is only known as *owdál*.

I may here remark that the word *Fahd*, translated by Lane and others as "lynx"—an animal that is never used for hunting—really means the *cheeta*, or hunting leopard of Persia and India.